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ABSTRACT

This action research project implemented and evaluated a program for increasing student motivation and interest in school to improve academic growth. The targeted population consisted of 37 high school students in a rural central Illinois community. Twenty-five students were in art classes and 12 were in child care classes. Anecdotal records, student surveys, teacher observation, and review of student portfolios documented the problem of lack of school motivation. The 7-month intervention consisted of the use of cooperative learning strategies and incorporation of the multiple intelligences theory. Post intervention data indicated an increase in students' participation in cooperative classroom activities, an increase in their motivation level, and a more positive learning atmosphere in the targeted high school classrooms. (Twenty-two appendices include data collection instruments and sample instructional materials. Contains 27 references.) (Author/KB)

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INCREASING STUDENT MOTIVATION THROUGH THE USE OF MULTIPLE INTELLIGENCES AND COOPERATIVE LEARNING TECHNIQUES

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Abstract

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Title: Increasing student motivation through the use of multiple intelligences and cooperative learning techniques

This report described a program for increasing student motivation and interest in school to improve academic growth. The targeted population consisted of high school students in a community located in rural central Illinois. Anecdotal records, student surveys, teacher observation, and review of student portfolios have documented the problem of lack of motivation in school.

Analysis of probable cause data revealed approximately 20% of the student population were of lower socioeconomic status and experience changes in family structure. Literature based data revealed that growing economic disparity and problems with social and domestic conditions gave rise to the number of children who are at risk for school failure.

A review of solution strategies suggested by knowledgeable others resulted in the selection of two categories of interventions: the use of cooperative learning strategies and the incorporation of the multiple intelligences theory.

Post intervention data indicated an increase in students' participation in cooperative classroom activities, an increase in their motivation level, and a more positive learning atmosphere in the targeted high school classrooms.

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CHAPTER 1

PROBLEM STATEMENT AND CONTEXT

General Statement of the Problem

Students in the targeted classes exhibited a lack of motivation and interest in school which interfered with their academic growth. Evidence for the existence of this problem included student achievement, anecdotal records, and teacher observation.

Immediate Problem Context

The targeted school was established in the fall of 1867 as a classical boarding school and held the distinction of being the first township high school in the state of Illinois. It is also one of the few remaining charter school districts in the state. As a result, the targeted four-year high school remained a separate district from the elementary system. In December 1924, the school was destroyed by fire. During the next year and one-half, school activities were carried on in the city hall, the post office, and several community churches. The existing three-story brick high school was opened in September 1926. During the summer of 1958, work began on a new addition to meet increased enrollment and the needs of students and faculty. In 1970, new facilities were constructed to alleviate the additional shortage of classrooms. In the spring of 1985, a new science wing was constructed which connected the 1926 building and the 1958 addition. This new facility was finished in 1986 with adequate space for science, special

education, and drama, as well as providing an elevator and access to all areas of the school for the handicapped (Student handbook, 1997-98).

The students at the targeted school are equally divided among males (50.2%) and females (49.8%). Most of these students reside in the town in which the school is located. The remaining students reside in three surrounding communities. In three surrounding communities, two smaller high school districts have annexed to the targeted school's district within the last 15 years. The current enrollment of the school is 819 students.

The racial background of the school population consists of 96.5% Caucasian, 1.6% Black, .6% Hispanic, 1.2% Asian or Pacific Islander, and .1% Native American. The school population also includes about 10% of the students eligible to receive free or reduced lunches (School report card, 1997).

The school's attendance rate is 93.7%, which is slightly below the state average. The student mobility rate is 14.4% and the chronic truancy rate is 3.1%, with 25 students considered to be chronic truants. The high school graduation rate is 86.2%, as compared to the State's graduation rate of 81.6%. The 1996-97 ACT average score was 23. During the 1996-97 school year, 96.1% of the parents made at least one contact with the student's teachers (School report card, 1997). All of the administrators, teachers, and support staff in the targeted school are Caucasian. There are three administrators: superintendent, principal, and assistant principal. There are three guidance counselors, a director of student activities, 55 teachers, and 15 support personnel. The teachers are equally divided between males (50.8%) and females (49.2%). The average number of years teaching is 17.9 years, with 43.8% of the teachers having a bachelor's degree and 56.2% of the teachers having a master's degree. The pupil to teacher ratio is 19:1 and the pupil to administrator ratio is 228:1. The average class size is about 19 students. The average

salary for teachers is \$41,130 and \$64,721 for administrators. The operating expenditure per pupil for 1995-96 was \$5,856 (School report card, 1997). There are currently six curriculum division areas that represent each department of the school. These divisions include: English, Fine Arts and Library; Health, Physical Education, and Drivers Education; Vocational/Technical; Mathematics, Science; Social Studies, Foreign Language; and Special Needs. The division heads are selected by the teachers in each division and have a common planning period that allows them to meet regularly to discuss and make recommendations on matters concerning the school.

The school day is organized in a flexible module (mod) schedule. There are 31 mods per day with each mod lasting 14 minutes. Most classes are three mods in length, or 42 minutes. Laboratory classes are four mods in length, or 56 minutes. There is a four-minute passing period between classes. The targeted high school will be converting to a four-block schedule in the coming school year.

The school offers 111 different courses. Student enrollment determines which courses will be taught each year. In addition to the typical college preparatory courses, there is a large selection of technological, vocational, fine arts, and accelerated courses. As a special service to all students, the school offers tutorial assistance through the Tutorial Learning Center (TLC), which focuses on helping students to attain their academic potential.

The school offers 39 extra curricular activities of which 17 are athletic teams. The school is known and respected for its achievement in volleyball, football, cross country, basketball and wrestling. The administration and school board are highly supportive and respectful of the programs offered in drama, art, band, and choir (Student handbook, 1997-98).

The school has a supportive foundation, which is actively soliciting contributions and funds from alumni and the community to renovate the 1926 auditorium. Money from the

foundation is also used to fund various programs within the school. There is also an active sports booster club, which helped raise funds to construct an all-weather track. The track was dedicated in 1997.

The school board and staff are proactive in the use of technology. All teachers have access to computers in the professional center which houses four computers, a color printer and scanner, and internet access. The school has invested monies to install two computer labs, and computers in the library, TLC, and in most classrooms. Many teachers conduct classes to teach other staff about computer usage. All participate in in-service days for staff training in computers.

The Surrounding Community

The targeted high school district is comprised of four communities that are supportive, involved, and interested in what is occurring in their schools. The high school is located in the largest of these communities, which has a population of 7,200. All indications show that the population, tax base, and assessed valuation are growing. The diversification of the town's industrial base along with its overall economic growth seems to be a solid foundation upon which to continue commercial, industrial and residential growth. Businesses that move into the industrial park receive tax abatements for ten years; thus the benefits to local schools are indirect. The growing tax base and the increasing population are major stabilizing factors in a sound educational system. The three smaller towns that make up the targeted high school district are residential communities with some light industry (School improvement plan, 1997).

The targeted high school is located in a residential district that is approximately five blocks from the business district. The communities associated with the high school are middle class and of Northern and Western European descent, and are both politically and economically

conservative. The economic base was originally agriculture, but over the years there has been the addition of light industry (School improvement plan, 1997). Approximately 27% of the adult population are employed in white collar professions (U.S. Census Report, 1990).

The percentage of middle-class, college trained people within the area seems high when compared to other communities. Because of this strong percentage of college educated people, the targeted school maintains strong college preparatory programs. The school has formed a Tech Prep program for students interested in technical careers. The Tech Prep program has been developed in cooperation with the local community college (School improvement plan, 1997). The ChildCare and Computer Aided Drafting (CAD) programs at the high school have articulation agreements with the local community college. Students that have their portfolio accepted and pass a written test will not be required to take two entry-level courses. Over the last five years, 13 students have successfully articulated into the Early Childhood Education Program (ECE) at the local community college.

Middle and upper middle class families with the median income of \$28,794 largely populate the communities. The median property value in the community is \$58,506. While unemployment statistics vary for the largest community, the approximate number of unemployed is 4.5%. The local office of the Illinois Department of Public Aid estimates that no more than 1% of the student population could be considered transient, and none are migrants. It also estimates that 20% of the largest town's population is dependent on some form of welfare benefits (School improvement plan, 1997).

There are several service agencies available to members of the community and the targeted school. There is a residential treatment agency for adolescents. This agency offers professional counseling services to persons of all ages throughout area counties and offers a

homemaker support system for at-risk families. Several students who reside at this treatment agency also attend the targeted school. The community substance abuse program is a joint program of the county schools. It supports the Drug Abuse Resistance Education (DARE) programs for the schools. The substance abuse program is presently helping to develop a peer mediation program at the targeted school.

A good working relationship exists between the targeted school and the communities that are interested in the school's programs and in providing a solid base of educational opportunities. The foundation for good communication has been implemented and the support and sharing of facilities are mutually enjoyed. Students are given opportunities in a variety of areas in which to develop their interests. The school continues to monitor the needs of its students (School improvement plan, 1997).

National Context of the Problem

Younger children are generally motivated to learn and have a positive attitude toward school. Most continue to exhibit this attitude as they grow older, even in the face of failure and adversity. According to Brophy, motivation to learn is a competence acquired through general experience but stimulated most directly through modeling, communication of expectations, and direct instruction or socialization by significant others (as cited in Lumsden, 1994). However, many learners begin to lose their motivation with repeated failures in school. Students may start to feel they do not want to do work that is required of them because they do not like school or just do not care. Lack of motivation and poor student attitude have a direct correlation to poor grades and attendance records. Some students may exhibit a lack of motivation in the elective courses for a variety of reasons. These may include repeated school failures in many courses or

the feeling that the course was an easy one. Students may have been placed in the course simply because it fit their schedule and may not even require the course for graduation.

This problem cannot be corrected overnight. The complex array of problems that contribute to low levels of student motivation make it impossible to devise a single, programmatic approach that will suddenly turn poorly motivated students into young people hungry for knowledge. Engendering student motivation is an ongoing process that requires creativity and energy (Renchler, 1992).

CHAPTER 2

PROBLEM DOCUMENTATION

Problem Evidence

Several methods of data collection were used to document the extent of the lack of motivation in the students. These included student attitude surveys, student anecdotal records, teacher observation checklists and reviews of student portfolios.

There were two high school groups of students involved in this study. They included 25 art students and 12 child care students.

A student motivational survey was administered to both groups in the first month of school. A copy of the survey is included in Appendix A. The survey was meant to reflect the student's interest or motivation in school. The results are shown in Table 1. The last statement ask them to rank themselves as to the quality of student they have been in the past (Figure 1).

Table 1

Pre-Intervention Survey

Questions	Strongly Agree	Agree	Disagree	Strongly Disagree
1. Succeeding in school is important to me.	33%	67%	0%	0%
	36%	64%	0%	0%
2. Earning a high school diploma is important to me.	83%	17%	0%	0%
	64%	32%	4%	0%
3. My parents encourage me to do well in school.	67%	33%	0%	0%
	68%	27%	5%	0%
4. It is important for me to study.	17%	83%	0%	0%
	23%	77%	0%	0%
5. I try to maintain a study schedule outside of school.	0%	75%	25%	0%
	4%	82%	14%	0%
6. I take school work home every night.	33%	33%	33%	0%
	18%	46%	36%	0%
7. I spend time preparing for my tests.	16%	58%	25%	0%
	9%	77%	9%	5%
8. Taking notes in class is important.	67%	25%	8%	0%
	41%	45%	14%	0%
9. Completing homework is important.	75%	25%	0%	0%
	45%	55%	0%	0%
10. I put a lot of effort into my homework.	25%	58%	17%	0%
	9%	77%	14%	0%
11. I seek extra help with my homework if needed.	25%	50%	25%	0%
	18%	59%	18%	5%
12. I like to do more work than is required.	8%	25%	50%	17%
	4%	23%	59%	14%
13. It is important for me to do well in this class.	100%	0%	0%	0%
	27%	73%	0%	0%
14. School is more important to me than a job or an extra-curricular activity.	33%	58%	8%	0%
	14%	54%	32%	0%
15. I feel my effort and my grade in this class are closely related.	75%	25%	0%	0%
	36%	59%	5%	0%

Child Care Student Responses

Art Student Responses

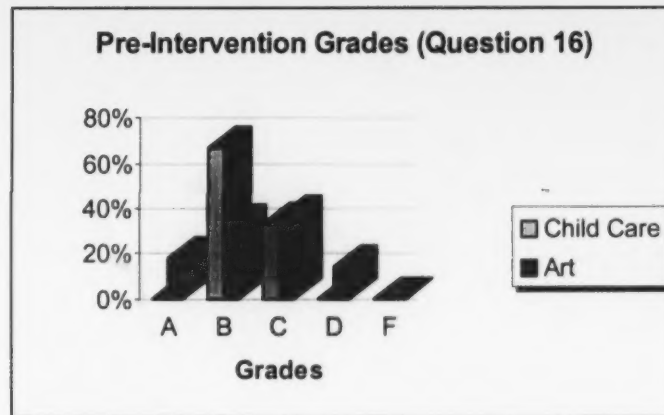


Figure 1. Question 16 on pre-intervention survey.

In the targeted art class, attendance also had a correlation with motivation. Figures 2-4 indicate the percentage of tardies and absences from class that occurred during the six, twelve, and eighteen week grading periods. Absences and tardies increased for students who were receiving a C, D or F grade.

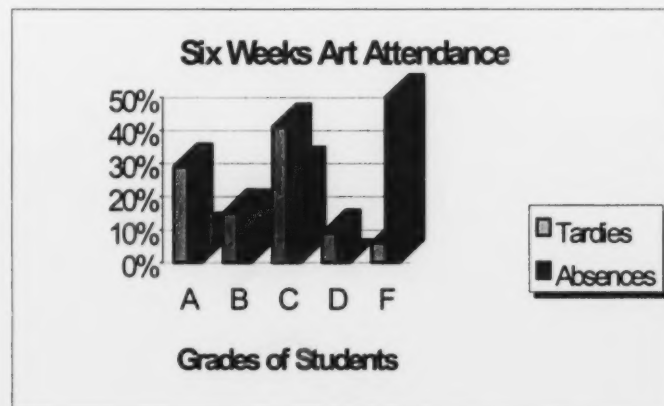


Figure 2. Six weeks Art grades versus attendance.

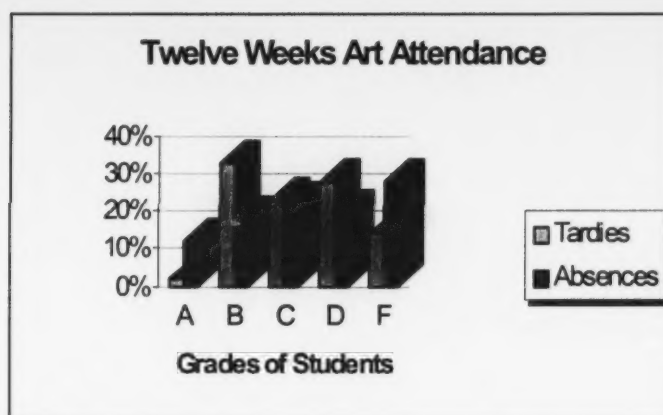


Figure 3. Twelve weeks Art grades versus attendance.

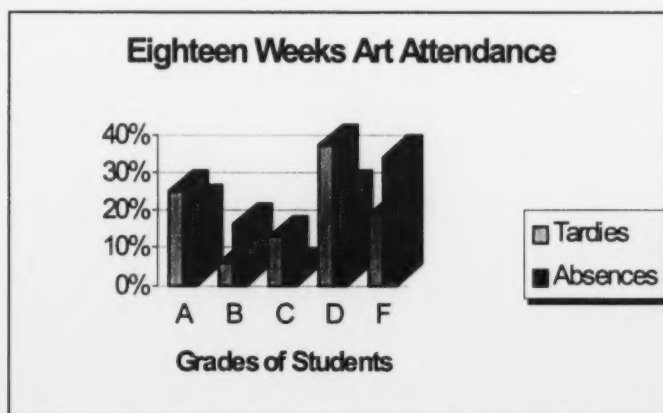


Figure 4. Eighteen weeks Art grades versus attendance.

Probable Causes

In analyzing the local site, probable causes of the problem may be inferred.

Approximately 20% of the students are living in single parent households and are receiving some form of welfare benefits.

A second factor in affecting motivation might be found in the staff at the targeted school. The staff is a very experienced one (average years 17.9) and for the most part were all taught in the typical lecture method when they attended college. Many of the staff are very traditional in

their teaching, using lectures for instructing and using low level thinking skill questions on tests. Much time has been spent in the past few years discussing that many teachers need to plan application activities in their lessons and use more authentic assessments and high level thinking questions on evaluations of students. Many of the staff believe there was not enough time to plan activities in the lessons and cover all the material they presently cover. Emphasis was placed in covering all the material in the textbook before the semester is completed. Many teachers become upset if their semester is cut short a day or so because they are unable to cover certain topics. Many students do not perform well in the traditional classroom where the successful students take copious notes and memorize facts without regard as to the relevancy of the material. After a lifetime of this type of classroom teaching students give up trying very hard.

The researchers suggest that 53 percent of all poor families are headed by a woman (Bureau of the Census, 1989c). Weitzman states "Divorce drops many women and children below the poverty level" (as cited in Rubin and Borgers, 1991, p.12). New one-parent families are created with teenage pregnancies. Most teenage mothers are neither emotionally nor financially equipped to deal with the demands of parenthood, usually in the absence of the teenage father. Taueber and Valdiera state that "As a result many teenage mothers live below the poverty level, usually resulting in long-term socioeconomic disadvantages for their children" (as cited in Rubin and Borgers, 1991, p.12).

Sweet and Bumpass believed that traditional families with two married parents accounted for only 56 percent of all households in 1989, a decline of 71 percent since 1970 (as cited in Rubin and Borgers, 1991, p.11). We are no longer living in a time where dad worked and mother had cookies and milk prepared for them. Some studies report a 50 percent decrease in the past 30 years in the amount of time parents are spending with their children in constructive activities.

Children do not have the adult supervision to do constructive cooperative activities, thus compounding the negative influences in the social environment for them. Children that are home alone are at more risk to every cultural poison they encounter than are children backed up by adults (Garbarino, 1997).

Researchers suggest that teachers should provide variety in learning activities. Changes in instructional activities such as using novel and interactive methods help students pay attention and renew interest. Younger students and low-achieving students needed more variety to avoid boredom. The idea was to get the student to ask "Why?" "How come?" and "What will happen if?" The goal was to get the students interested and then to think. Most important, educators needed to avoid too much teacher talk; it led to a bored, passive audience (Ornstein, 1995). Teaching strategies should not be limited to how content is presented and classes are organized. To achieve optimal effectiveness and efficiency, the most realistic instructional approaches may be one-on-one, peer tutoring, cooperative learning, large-group instruction, heterogeneous grouping, learning centers, or independent study (Palardy, 1997). Feden noted "Teachers who present information in various ways are more likely to meet diverse learners' needs" (as cited in Palardy, 1997, p.22). Students will benefit by teachers incorporating the use of multiple intelligences and a variety of learning styles in their teaching activities.

Ornstein suggested, that "Academic achievement is a matter of wanting to achieve, focusing on the task, and believing in oneself- concepts education theorists call volition, self-regulation and self-efficacy" (Ornstein, 1994, p.27-28). According to White, "Motivation begins early in life. People of all ages have an inherent need to feel competent and interact effectively with the environment" (as cited in Schunk and Cutshall, 1997, p. 124). Pintrich and Schunk

stated "Motivation is the process by which goal-directed actions are instigated and sustained" (as cited in Schunk and Cutshall, 1997, p.124).

The utilization of cooperative learning and the implementation of multiple intelligences in the lessons will provide more opportunities and experiences for the students to be more successful.

CHAPTER 3

THE SOLUTION STRATEGY

Literature Review

A declining interest in school and a lack of motivation, especially at the secondary level, has been of great concern to educators for some time. Researchers as well as educators have addressed a number of social and economic factors considered to be underlying causes attributed to these educational problems. Even though educators know that these problems need to be addressed, many do not know where to start or how to execute changes that will make a significant difference in their classrooms.

Educators need to first understand that children today live in a world quite different from that of their elders. They face an extremely challenging social environment that involves growing economic disparity, a growing acceptance of abuse and violence, a feeling of disenchantment with our government, and a sense of importance that society has placed on material goods and self-interest. These influences make young people feel hopeless, helpless, and powerless (Berreth and Berman, 1997). Social and domestic conditions are creating school populations that are becoming more diverse, leading to a rise in students who are at risk for school failure (Maheady, Mallette, and Harper, 1991).

Motivation has a direct correlation with a student's achievement in their school environment. According to White (as cited in Schunk and Cutshall, 1997), motivation begins early in life. People of all ages have an inherent need to feel competent and interact effectively with the environment. Teachers must create a learning environment that promotes student thinking and that stimulates personal expression of such thinking (Sanacore, 1997). Problems with our changing society, along with the influences they have on our children, are not going away. Traditional instruction procedures alone may not help to make the situation any better. Instead, we may need to incorporate instructional methods that are able to accommodate a variety of learning styles and backgrounds (Maheady, Mallette, and Harper, 1997).

Teachers can be a great influence on a student's motivation. Teachers can set goals to help encourage student motivation for learning in as well as outside of school. Schunk and Cutshall wrote that "To enhance student motivation for lifelong learning, teachers must show students that they can make a difference in their environment because they are competent and can deal effectively with challenges" (1997, p.125).

According to Fogarty, there is a direct connection between the learning environment and the learning outcomes (1997). Teachers need to set standards for themselves as well as the students. The teacher needs to determine if the learning environment contributes to the high expectations for students to grow and learn, to be equipped with skills for lifelong learning, to be totally involved in the learning experience, and for students to know how to apply what they have learned to appropriate life situations.

A main goal for teachers is to present information that students can learn and then transfer and apply to other situations in life. Teachers need to ask themselves how they can encourage transfer of learning from one context to another. Fogarty suggested that there are three

strategies that promote this kind of transfer: cognitive mediation, metacognitive reflection, and direct application. "Cognitive mediation is the teacher leading the students to self-reflection, or thinking about their own thinking; metacognitive reflection is student-initiated self-reflection; and direct application is the learner awareness of the self-reflective process through purposeful use" (1997, p.189).

There are several ways that teachers can ensure that student learning and transfer take place. One is to incorporate the study and use of multiple intelligences in the classroom. According to Chapman, Howard Gardner and his colleagues developed the theory of multiple intelligences. In this theory, Gardner held that "every individual possesses several different and independent capacities for solving problems and creating products" (1993, p.1). Gardner has shown that people learn differently. He has identified eight types of intelligences: verbal/linguistic, musical/rhythmic, logical/mathematical, visual/spatial, bodily/ kinesthetic, intrapersonal, interpersonal, and naturalistic (Chapman, 1993).

The verbal/linguistic intelligence pertains to the uses of language. People who are strong in this intelligence are highly sensitive to the meaning of words and communicate easily through reading, writing, listening, or speaking. Everyone has some musical capabilities, but those who have more highly developed musical/rhythmic intelligence have a high degree of sensitivity to pattern of sounds, pitch, rhythm, and timbre. The logical/mathematical intelligence involves numbers and reasoning. It blends both the mathematical and scientific abilities through logical and analytical thought processes. Those who possess the visual/spatial intelligence have the ability to see the visual world accurately and can recreate spatial information and one's visual experiences. People with the innate ability to control one's bodily motions and to skillfully manipulate objects are considered to be bodily/kinesthetic learners. Students who possess this

intelligence express their learning and knowledge through practical demonstration, action and movement. Intrapersonal intelligence deals with the ability to know oneself and to understand one's own feelings and emotions, while the interpersonal intelligence focuses on the ability to understand and relate to others. Someone with interpersonal intelligence also has the capacity to read the intentions of others, even when they are hidden. The latest type of intelligence to be identified is known as the naturalist intelligence. People who possess this intelligence are highly sensitive to nature, their environment, and the study of science. They also have the ability to distinguish and identify a variety of species of plants and animals, as well as make other categorizations in nature (Chapman, 1993).

In most classrooms, students are most likely to be taught by a teacher who is highly sensitive in the verbal/linguistic or logical/mathematical intelligence. If a student is also strong in either or both of these intelligences, then that student has a good chance of understanding the subject content and class work, earning higher grades, and doing well on standardized tests that measure knowledge in terms of those two intelligences. However, if a student is more highly developed in any of the other intelligences identified by Gardner, that student may not fare as well as the student who identifies with the verbal/linguistic or logical/mathematical intelligence (Bellanca, 1997). By designing and varying activities that incorporate the use of the multiple intelligences, teachers can better meet the needs of our diverse populations of students. Students need to see themselves as possessing a combination of the multiple intelligences, and also to understand that they are capable of growth in all areas. With the use of multiple intelligences, students are not expected to think exactly like everyone else in the class. When a teacher tries to personalize each student's educational experience, students begin to discover their

own strengths, work at improving their weaknesses, and start to feel better about themselves (Nelson, 1995).

Another way of enhancing student learning and increasing motivation is to incorporate the use of cooperative learning into classroom activities. Hilke stated that "cooperative learning is a structure in which groups of students work together to pursue shared goals" (as cited in DeJong and Hawley, 1995, p. 45). Cooperative learning easily lends itself to the integration of the school curriculum, which furnishes students with a connection between life and school. Cooperative learning is also considered to be a teaching tool that enhances the concept of relevancy and real-life learning for the students (Rice, 1994).

Cooperative learning, or active learning, can function and operate on many levels in a classroom. One level may involve activities that allow students to produce an immediate effect several times during one class period, or to be involved in tasks that require physical movement. A more complex level may require "hands on" learning. At the highest level, students are required to use the active engagement of their thinking processes in learning and applying knowledge. According to Bellanca, "Five criteria mark this engagement of students as mindful learners: focus activity, cooperative structure, mediation, transfer, and evaluation." (1997, p. xxiii).

In order to make learning more relevant for students, teachers need to first supply students with a reason and purpose for what they are being taught and why this is important. The value of each activity must also be stressed. If students understand and see that knowledge or a specific skill they are being presented with can be applied in another area, the information will be more valuable and relevant to them. According to Lepper and Okola et al, teachers can also "capture interest through the following: activate students' prior knowledge of specific topics;

point out inconsistencies between new information and prior knowledge" (as cited in Mushinski Fulk and Montgomery-Grymes, 1994, p. 32). Higher order thinking questions can then be asked to increase curiosity. Malone and Lepper also stated "When possible, harness fantasy relevance by allowing students to use their imagination. If the content of material being presented is not meaningful for students, or is seen by the students as busy work, the students will not be as motivated to stay on task" (as cited by Mushinski Fulk and Montgomery-Grymes, 1994, p. 32).

According to Schunk and Cutshall (1997), there are six key components associated with motivational learning. These include goal setting, modeling, providing encouragement, using feedback, teaching self-evaluation, and structuring cooperative learning groups. Goal setting helps students to realize what they want to accomplish and helps motivate them to do what they are capable of doing. Goals also supply standards to which students can judge their progress. As students achieve goals, their self-esteem and confidence can grow. If however, students do not make as much progress as hoped, they can still be motivated if they feel they can perform better by using a different learning method or seeking help.

Modeling is important in so many ways. Through observation, students can learn a specific task or series of actions to complete a task, which is especially important for the visual/spatial learner. Modeling can provide encouragement, or show how to deal with problems or mistakes. Modeling can also help to develop lifelong learning skills that students can transfer to many areas in their life.

Through encouragement, a teacher can help to build a student's self-esteem and strengthen their motivation. It is the teachers' responsibility to help a student feel and be successful. Students should not be bored with school, but be interested in what they are doing

(Ornstein, 1995). Encouragement must be genuine and must substantiate what the student is accomplishing, or it will not have a positive effect on the student.

Feedback from a teacher can do many things in itself. It can provide positive reinforcement, provide correction, or give encouragement to the student. Just as with encouragement, teacher feedback must be meaningful to the student.

In self-evaluation, a person compares their own progress with their goals and judges whether their progress is acceptable. Self-evaluation is such an important lifelong learning skill to teach because motivation requires students to be aware of progress they are making, and makes them decide if they should continue. If a student does not know how to self-evaluate, he must be taught.

Establishing cooperative groups is key to motivation in the classroom. Cooperative learning groups help students feel competent because all the members share in the group's success. It is important for teachers to plan carefully to allow for students to succeed in group tasks, because motivation will only occur when groups are successful (Schunk and Cutshall, 1997).

Cooperative learning can help build self-esteem and encourage motivation. It can also have a positive effect on peer socialization and development of social skills. During the adolescent years, students are highly susceptible to peer pressure. Traditional schools often treat students like children, giving them little authority, responsibility, or opportunities to interact with other students in the classroom. Most adolescents want responsibility and dislike being a passive part of the classroom. Little wonder then, that some adolescents seek active participation and responsibility in anti-social groups (Slavin, 1996). Cooperative learning allows students to become an active participant in the classroom, working as a team with certain responsibilities

they share with their group. Each member is given a degree of responsibility, which in turn contributes to success of the group.

The success of a cooperative learning group depends upon several elements. These include positive interdependence, face-to-face interaction, individual accountability, development of social skills, and group processing. Teachers cannot assume that students know how to do all of these tasks associated with cooperative learning. Students must be provided with the social skills needed to get along and work together as a group. Teachers must also set criteria and standards for individual, as well as group evaluation. Teachers must know what to look for as a group works together, and how to keep track of any weaknesses or strengths that are observed (Rice, 1994).

The use of multiple intelligences and cooperative learning techniques lend themselves to the integration of several subjects in a school's curriculum. Currently, our country is seeing a rise in the attention given to cross-curricular integration. Many state and school system curriculum guides promote integration between subjects. When curriculum integration occurs, the communication processes of reading, writing, listening and speaking come together with instruction that is taking place (Wood and Jones, 1994). All of the positive aspects that have been discussed, such as peer group interaction, boosting students' self-esteem and motivation, and giving relevancy to what is being presented, come together in an integrated, cooperative classroom.

The use of multiple intelligences and cooperative learning can have a positive effect on the active learning of our diverse groups of students. Researchers have shown that cooperative groups help to increase thinking and problem solving skills. Joyce stated that "Research on cooperative learning is overwhelmingly positive and the cooperative approaches are appropriate

for all curriculum areas. The more complex the outcomes (higher-order processing of information, problem solving, social skills and attitudes), the greater are the effects" (as cited by Bellanca and Fogarty, 1997, p. 4).

A responsibility of educators is to help students develop a good thinking mind. An underlying goal should be to help students become independent individuals who are able to take part in making decisions about their own future and society (Williams and Woods, 1997). This can be fostered through classrooms where students are active participants and understand the relevancy of what they are learning and why. When this happens, students take this knowledge with them into all other aspects of their academic and social lives. The best classrooms are those where instruction is relevant, student centered and integrated (Wood and Jones, 1994). When students become actively involved and challenged in the classroom, motivation increases and learning becomes meaningful.

Project Objectives and Processes

Objective 1:

As a result of incorporating multiple intelligence techniques and methods, during the period of September 1998 through March 1999, the high school students in the targeted family and consumer science and art classes will increase the quality of their academic performance, as measured by student surveys, class grades, teacher observation checklists, and reviewing of student portfolios.

In order to accomplish the project objective, the following processes are necessary:

1. Administer a learning styles assessment.
2. Using the results of the learning styles assessment, arrange students to form base groups.
3. Incorporate instructional materials for using multiple intelligences.

Objective 2:

As a result of incorporating cooperative learning techniques and methods, during the period of September 1998 through March 1999, the high school students in the targeted family and

consumer science and art classes will improve the group dynamics, as measured by student surveys, class grades, teacher observation checklists, and reviewing of student portfolios.

In order to accomplish the project objective, the following processes are necessary:

1. Form base groups for cooperative learning activities.
2. Develop instructional materials for cooperative learning.
3. Incorporate new instructional materials and techniques in the class.

Action Research Plan

I. Survey

- A. Student attitude survey will be administered at the beginning and at the end of the intervention.

II. Learning Style Portfolio

- A. A general discussion of the different types of learning styles will take place.
- B. Students will discover their preferred learning style using computer software in the school computer lab.
- C. The teachers will conduct a classroom discussion of the student's preferred learning style and its implication in studying and learning of subject material.

III. Cooperative Learning Strategies

- A. Students will be divided into base groups that will change periodically throughout the semester.
- B. Introductory lessons on developing social skills will be completed by base groups in the beginning of the intervention.
- C. Students will be assessed using a teacher observation checklist.
- D. Students will write a PMI at the completion of each unit of study.
- E. Cooperative learning in base groups will be used two to three times per week throughout the semester, as deemed appropriate.
- F. A variety of graphic organizers will be used with cooperative base groups.

IV. Multiple Intelligences

- A. The use of the theory of multiple intelligences will be implemented into lessons being presented to the targeted high school classes involving art and child care.
- B. A variety of graphic organizers will be used in the lesson activities.
- C. PMI and journal writing will record student reflections.

V. Methods of Assessment

To determine the effectiveness of the interventions, the teachers will review student reflections, portfolios, journals, anecdotal records, teacher observation checklists, and comparison of student attitude surveys.

CHAPTER 4

PROJECT RESULTS

Historical Description of the Intervention

The objective of this project was to improve group dynamics, increase student motivation, and increase the quality of the academic performance of secondary students in the targeted family and consumer science and art classes. In order to implement these objectives, several strategies were used. Cooperative learning and the use of multiple intelligences were incorporated into classroom activities. Activities requiring the students to use higher-order thinking and decision making skills were also utilized.

In order to determine the students' motivation and attitude toward school, a survey was administered at the beginning and end of the semester. In addition to giving responses concerning their motivation and attitude toward school and studying, students were also asked to estimate their overall grade average as students.

In the beginning of the intervention the students completed a learning style inventory. Results of the inventory indicated the student's preferred learning style. The results of the inventory were considered in the formation of the base groups, providing balance in abilities and learning styles. As students worked together, they became more comfortable with each other and demonstrated more confidence in their performances. Base groups consisted of three to five

students per group. The base groups participated in intervention activities at least once during each major unit of study, as deemed appropriate by the teacher researchers.

Lessons were designed to incorporate higher-order thinking skills such as comprehension, analysis, synthesis, evaluation, decision-making, and application. A variety of graphic organizers were utilized with cooperative base groups as visual aids to enhance materials being presented.

Activities that focused on the development of social skills and the introduction of cooperative learning were incorporated in the beginning of the intervention. Role responsibilities and how to work in cooperative groups were discussed and a visual display was posted to reinforce the guidelines. (Appendix B) The early activities focused on group dynamics and were used to spark interest in cooperative learning, as well to create a positive classroom and working environment for all students.

To determine the effectiveness of the interventions, a variety of assessment tools were utilized. Teacher observation checklists, PMI forms, student self-evaluations, student journals, grading rubrics, student portfolios, and student reflections were used in the intervention.

Art Class

There has always been a great interest in art for students enrolling in the first level of art offered at the targeted high school. Even with this natural enthusiasm, there were still students who enrolled in the first level of art believing it to be a course they could pass with little effort. Problems that arose in prior classes at this level were with those who lacked the motivation to succeed. The intent of this instructor was to raise the interest and motivation of all the students in this first level course through the use of multiple intelligence and cooperative learning strategies.

Lessons involving these strategies incorporated a variety of higher-order thinking skills along with hands-on activities, thus actively engaging all of the students in the class.

To introduce the students to working together in base groups, discussions were held on what cooperative learning was and its function within the groups. Outlines for working together as a group were reviewed. Several activities involving the need to work together as a team were introduced. The first activity involved the creation of a "Run-See-Do" poster. Students were placed in their base groups, and the specific roles for each member of the group were given. These roles included one describer, one runner, and two to three artists. After being given instructions for each role (Appendix C), the students then decided among themselves who would perform each task based on the personal strengths of each student. An observation checklist written for this activity (Appendix D) was used to assess the activity and involvement of each group and its members.

The second activity involved two students working together to create a drawing. The students sat back-to-back so they could not see what the other partner was doing. The roles in each team involved a describer and an artist. The describer was given an envelope containing a specific design. This student had to give instructions to the artist without allowing the artist to see the design. The artist would draw the design while listening to the descriptions given. After the drawings were completed, the students compared how well they had completed the drawing together. The roles of the teams were then reversed. Both of these activities allowed the students to focus on the interpersonal and verbal/linguistic intelligences, as well as the visual/spatial and bodily/kinesthetic intelligences. The activities were high energy, involving a lot of talking and active communication between team members. The students were very enthusiastic about these activities. They discovered that hard work, active participation, and cooperation of each member

of the group were necessary to succeed. An observation checklist form was used to evaluate each team and its members. (Appendix E) This same checklist was used for several cooperative learning activities throughout the semester. The instructor set up the criteria to be assessed before an activity would begin, then placed the criteria to be observed on the checklist. After both activities, the students were asked to write reflections about what they had learned on a PMI form. (Appendix F)

After studying some of the basic elements and principles of design, such as line, shape, space, balance, and texture, the students were ready to sketch outdoors. This unit began by working together in a cooperative lesson involving the naturalist intelligence to create a three-dimensional tree. After a review of the assignment and how to work together as a team, each base group was given an empty bag and sent outside. As a team, the students were sent outside to collect only natural materials that could be used to create a tree. Using the elements and principles of design, the students used their found materials to create a three-dimensional tree on the sidewalk. Each group then answered the questions on the back of their assignment sheet. (Appendix G) The students were given time to walk around and observe the other trees displayed on the sidewalk, then discuss the experience together as a class. Several students mentioned that they all can see the same things, but can interpret them so differently. Evaluation of the lesson included the observation checklist and written PMI reflections by the students. The students were able to use their visual/spatial as well as their verbal/linguistic skills. This activity proved to be a productive transfer for the students as they began drawing outdoors.

At the completion of the self-portrait drawing unit, the students worked in a cooperative lesson involving the study of other artists of different time periods and styles. The students were each given a color self-portrait illustration and written information about an artist of their choice.

The choices included Picasso, Leonardo da Vinci, Rembrandt, Max Beckman, Frida Kahlo, Ivan Albright, and Vincent van Gogh. Students read and studied about their chosen artist, then completed an art analysis worksheet about the art reproduction and the artist. (Appendix H) The students then chose partners. Using verbal/linguistic and interpersonal intelligences, the students were able to pair-share the information they acquired about their artist. A Venn diagram was also used to compare and contrast the two artists and their self-portraits. (Appendix I) At the end of this cooperative activity, the students then turned to their intrapersonal intelligence to assess their own work. The students first graded their own self-portrait drawing using a scoring rubric. (Appendix J) A self-evaluation journal form was then used to reflect on the self-portrait drawing unit. (Appendix K) Many of the higher-order thinking skills such as decision making, application, analysis, compare and contrast, synthesis, and evaluation came into play. The students took a closer look at themselves as a person and as an artist. The results gained from this unit were positive for the students, as well as the instructor.

Two cooperative learning activities were incorporated during the figure drawing unit, which followed the self-portrait drawing unit. The students first learned how to proportion and then draw a human figure. The students relied on their visual/spatial skills to perform these tasks. As they became familiar with proportioning the figure, the students then took turns modeling for their base groups. At this point, the bodily/kinesthetic intelligence became the focus for the models.

The second activity involved group figure drawings. Each base group was given an 18"x 24" sheet of drawing paper. The task was for each person to create a contour line sketch of a figure somewhere on the paper. Proportioning of the figure, as well as the incorporation of the elements and principles of design, were stressed. Unlike the other cooperative learning activities

presented up to this point, the group drawings did not produce the same positive results as hoped by the instructor. Through teacher observation checklists and student reflection, some students indicated they were not as motivated to combine their drawing efforts. Some students felt they were not as talented in proportioning the figure, and were embarrassed to show their work next to others that may have excelled in this area. The assignment also took more time than was planned. The instructor needed to build the confidence of some of the students by explaining that this was one of the more difficult units they would experience, and that practice could only help to improve their skills. During this unit the instructor realized the importance of both teacher observation and student reflection.

The last lesson involving the drawing unit dealt with perspective drawing. As with most of their units of study, the students focused on the visual/spatial and verbal/linguistic intelligences. At the completion of the perspective drawing unit, the students worked in groups of three to complete a triple-Venn diagram. (Appendix L) Together the students listed the definitions and characteristics of one-point, two-point, and aerial perspective. The students wrote PMI reflections and were evaluated with scoring rubrics. (Appendix M)

Before interventions involving the use of multiple intelligences and cooperative learning began, an action plan written by this instructor was outlined for the art class. (Appendix N) The only deviation from this plan occurred at the end of the first semester. Two cooperative learning activities involving the watercolor painting unit were not implemented. Shortly after beginning the interventions, a student teacher was placed in the art classes. The student teacher began by observing the art classes and soon became involved in the lessons and cooperative activities of the students. The student teacher worked with the instructor to gradually take over the main

teaching responsibilities of the targeted art class. While the student teacher did an excellent job of presenting the outlined curriculum, a slightly slower pace of the lessons did occur.

There were several other activities involving the targeted art class that highlighted the effects of the outlined interventions. Class critiques were used to analyze students' work in progress, and assess what needed to be done to complete the work. These critiques, which also took place at the end of some of the units, became a strong visual tool for student self-assessment. Journal writing about a student's artwork was introduced early in the intervention process. This allowed students to tap into the intrapersonal and verbal/linguistic intelligences. Art progress forms (Appendix O) were used during grading periods to inform students of their current attendance, grades, and any missing assignments. Besides informing students of current standing in class, the progress forms allowed the students to evaluate their progress and take responsibility for their own work. One of the requirements of the art program was to learn how to prepare and display one's own artwork. In learning how to prepare for art exhibits, students applied many of the intelligence theories presented in class and utilized skills learned in class. Students were able to see first-hand the culmination of their hard work and the group effort required in presenting an art exhibit. The students also gained a sense of pride in a job well done.

The musical/rhythmic intelligence was not taught as a separate intervention, but was incorporated into the daily curriculum. A wide variety of music including New Age, instrumental, popular, classical, and jazz was played on a daily basis. At first there were a few students who were not shy in voicing their opinions about the musical selections. As with any aspect in life, everyone will not be pleased. However, the students came to enjoy the constant rhythms and sounds, and would notice if the room was too quiet. Some students even began

explaining the effects music can have on learning. This researcher found that the musical sounds played in the art room created a very relaxed and peaceful environment in which to work.

The nature of an art class lends itself beautifully to the inclusion of the multiple intelligence theories, along with cooperative learning strategies; each student is given many opportunities in which to artistically express their strengths in learning.

Child Care Class

In the child care class from the family and consumer science department, the use of cooperative learning was used extensively during the intervention. This allowed a lot of material to be covered in a relatively short time and allowed practice in working with others on a regular basis. The main learning experiences for these students was teaching the children from the community in their preschool. The use of cooperative learning started the very first week of the new term. Former and present students have indicated that working and getting along with others were the most difficult feats they had to do in class. The first nine weeks of school prepared the students for their role of student teachers in Tiny Tigers Preschool. Various multiple intelligences were found throughout the lessons used in the interventions.

The use of interpersonal, verbal/linguistic, and visual/spatial intelligences were used in the creative arts activities unit. Three cooperative groups read three different articles on definitions of a creative activity and used the Venn diagram to compare appropriate creative activities and inappropriate creative activities for young children. (Appendix I) After completing the diagram, the students jig-sawed their answers while the teacher recorded the answers on an overhead transparency. In the next procedure the students used a web to define the value of art for young children. (Appendix P) The students enjoyed creating their web and indicated that this was fun. The students felt it was much better and more educational than other methods, such as a

study guide. They also indicated on a PMI, that they liked the idea of hearing others' ideas. (Appendix F) The students also enjoyed participating with a group while doing their work. The teacher used an observation checklist during the activity. (Appendix E) The students were evaluated on their ability of staying on task, carrying their fair share, and understanding of the material on the web. The web was posted on the wall for display and future reference.

This class contained first and second year students. The second year students used bodily/kinesthetic and interpersonal intelligences by modeling 14 creative activities that could be used with young children. These were examples of the lessons they used in their teaching the previous year. A PMI completed by first year students indicated they felt watching fellow classmates teach them was very informative. The second year students enjoyed displaying their skills and experience with other classmates.

The intrapersonal intelligence was used in the project preparation aspect of the creative activities. All students selected eight creative activities that they wanted to use as lessons in Tiny Tigers Preschool. Each student demonstrated teaching two activities to the class thus utilizing verbal/linguistic, bodily/kinesthetic and logical/mathematical intelligences. The sample lesson and assignment appears in Appendix Q.

The musical/rhythmic intelligence was used in the unit on the use and importance of finger plays and music in early childhood classes. The students watched, listened, and sang the finger plays and songs performed by this instructor. The students were then responsible for being able to perform and sing the words of 15 songs appropriate for young children to their classmates and with the preschoolers. (Appendix R)

Visual/spatial and logical/mathematical intelligences were used in the mathematics unit for early childhood. Four cooperative groups used graphic organizers to understand mathematics

concepts for young children. (Appendix S) Each group jig-sawed a graphic organizer and later reproduced them for each group. Child care students used verbal/linguistic and bodily/kinesthetic intelligences when assigned to teach two mathematics lesson activities in Tiny Tigers. A sample lesson plan may be found in Appendices T- U.

The storytelling and flannel board story unit used logical/mathematical, bodily/kinesthetic, verbal/linguistic, and interpersonal intelligences throughout the two-week time period. The second year students taught units on using different techniques in reading to children and selecting age appropriate books. They discussed why reading was important to children, selected several storybooks as examples, and demonstrated how to tell a flannel board story using the characters they made. The first year students were given an assignment to make their own flannel characters using an appropriate book for the story and to demonstrate how to tell the story for the rest of the class. Samples of the flannel board project assignments and assessment rubrics are included in Appendix V.

Presentation and Analysis of Results

Cooperative learning was actively used in conjunction with brief lecture/discussions during specific lessons. These lessons were structured to incorporate the use of higher-order thinking skills as part of class discussions. Through PMI reflections and teacher observations, the researchers found that the students felt the cooperative learning activities were enjoyable and educational. These hands-on activities allowed them to interact and learn from others in the class. Many of the activities made the materials covered more clear, concrete, and understandable. Many of the activities were also said to be good reviews for what had been covered in class and were used as reference for tests and other activities. The use of multiple intelligence theories and cooperative learning benefited the instructors as well as the students. The instructors were able to

incorporate new ideas and techniques into their units of study, allowing for fresh and exciting lessons that added to their present curriculum.

The use of the multiple intelligences and cooperative learning played major roles in the targeted classrooms. The teachers worked hard to incorporate them in the lessons. They observed the students' interactions and enjoyment in working together as a team. The students were actively engaged in their learning and were excited when they had an opportunity to use their strongest intelligence. The students took ownership in their efforts and work throughout the class. The lessons were structured to incorporate the use of higher-order thinking skills as part of class discussions.

Table 2

Pre and Post Motivational Student Survey

Questions	Strongly Agree	Agree	Disagree	Strongly Disagree
1. Succeeding in school is important to me.	33%	67%	0%	0%
	50%	50%	0%	0%
	36%	64%	0%	0%
	32%	68%	0%	0%
2. Earning a high school diploma is important to me.	83%	17%	0%	0%
	100%	0%	0%	0%
	64%	32%	4%	0%
	68%	27%	5%	5%
3. My parents encourage me to do well in school.	67%	33%	0%	0%
	67%	33%	0%	0%
	68%	27%	5%	0%
	63%	27%	5%	5%
4. It is important for me to study.	17%	83%	0%	0%
	8%	67%	25%	0%
	23%	77%	0%	0%
	5%	90%	5%	0%
5. I try to maintain a study schedule outside of school.	0%	75%	25%	0%
	0%	58%	42%	0%
	4%	82%	14%	0%
	0%	50%	45%	5%
6. I take school work home every night.	33%	33%	33%	0%
	25%	42%	25%	8%
	18%	46%	36%	0%
	0%	59%	36%	5%

7. I spend time preparing for my tests.	16%	58%	25%	0%
	16%	42%	33%	8%
	9%	77%	9%	5%
	5%	63%	27%	5%
8. Taking notes in class is important.	67%	25%	8%	0%
	25%	67%	0%	8%
	41%	45%	14%	0%
	14%	63%	23%	0%
9. Completing homework is important.	75%	25%	0%	0%
	33%	67%	0%	0%
	45%	55%	0%	0%
	27%	73%	0%	0%
10. I put a lot of effort into my homework.	25%	58%	17%	0%
	8%	50%	42%	0%
	9%	77%	14%	0%
	13%	59%	23%	5%
11. I seek extra help with my homework if needed.	25%	50%	25%	0%
	16%	42%	42%	0%
	18%	59%	18%	5%
	5%	54%	32%	9%
12. I like to do more work than is required.	8%	25%	50%	17%
	8%	42%	50%	0%
	4%	23%	59%	14%
	5%	13%	59%	23%
13. It is important for me to do well in this class.	100%	0%	0%	0%
	83%	8%	8%	0%
	27%	73%	0%	0%
	32%	68%	0%	0%
14. School is more important to me than a job or an extra-curricular activity.	33%	58%	8%	0%
	16%	50%	25%	8%
	14%	54%	32%	0%
	9%	63%	23%	5%
15. I feel my effort and my grade in this class are closely related.	75%	25%	0%	0%
	50%	42%	8%	0%
	36%	59%	5%	0%
	27%	64%	9%	0%

Child Care Student Responses
Post Intervention Survey Results Shown in Bold

Art Student Responses
Post Intervention Survey Results Shown in Bold

While 67% of the parents of the child care students were strongly encouraging their children to do well in school by the final exam, only 50% of the students strongly felt their efforts affected their class grades and only 16% strongly agreed school was more important than a job or extra-curricular activity. Very few students, 16%, strongly agreed that they spent time preparing for tests. This low number could be explained in the belief that efforts do not influence

their grade. Overall attitude remained consistent with the 33% who strongly agreed that completing homework was important and the 8% who strongly agreed that they put a lot of effort into their homework. Only 16% seek extra help with homework if needed.

The teacher researcher concluded that although two thirds of the parents encouraged their children to do well in school, the students placed other activities ahead of education and did not accept the relationship between their own action or inaction and the results obtained in the classroom. The teacher researcher further concluded that some students had very low levels of desire for succeeding in the classroom and classroom success was a very low priority. Naturally, if school success was a low priority, then classroom success or the lack of success becomes self-fulfilling. The survey results indicated course content and classroom presentations had only a very limited influence on the students' academic success so long as the students did not possess a strong desire for success or acceptance that their efforts control their destiny. This action research project demonstrated how powerful outside influences, other than teachers, schools, and even family, were on the success of the students.

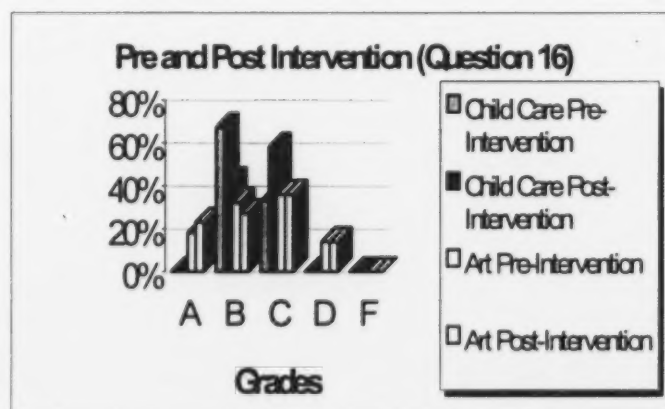


Figure 5. Question 16 pre and post intervention.

Child Care

According to figure 5, all of the students indicated they were an average or above average student. When the pre-survey was given 66% indicated they were an above average student, whereas with the post intervention survey there was a 25% decrease in the students that felt they were an above average student. The post survey showed that 58% of the students felt they were average students. Comparing their beliefs to actual grades received at the end of eighteen weeks, only 25% actually had an average grade on their report cards. Thirty-three percent of the students were above average students compared to their reporting of 41%. No students indicated they were poor or failing students; however in reality 16% received a poor or failing grade at the end of the 18 weeks. One could conclude that the students over-reported their grades. The students did not want to admit to themselves or to any one else that they were anything but an above-average or average student. Another conclusion was some may not have realized the actual caliber of their grades.

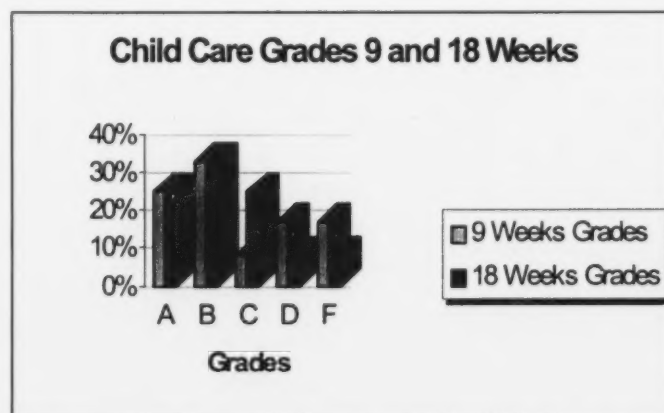


Figure 6. Child Care grades nine and eighteen weeks.

Figure 6 illustrates the number of students receiving A's and B's remained constant for the time period from nine weeks until the end of the semester. A change took place on the

number of students receiving C's. The number of C's increased by the end of the semester and the number of D's and F's decreased accordingly. This instructor felt this could be attributed to the realization that their efforts did not produce the grade they desired and required for them to participate in Tiny Tigers.

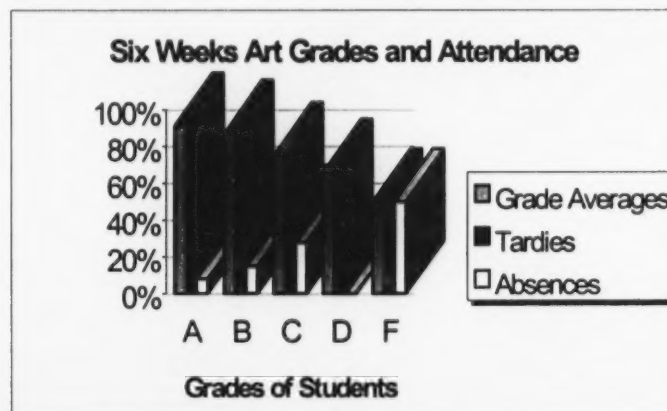


Figure 7. Comparison of six weeks Art grades and attendance.

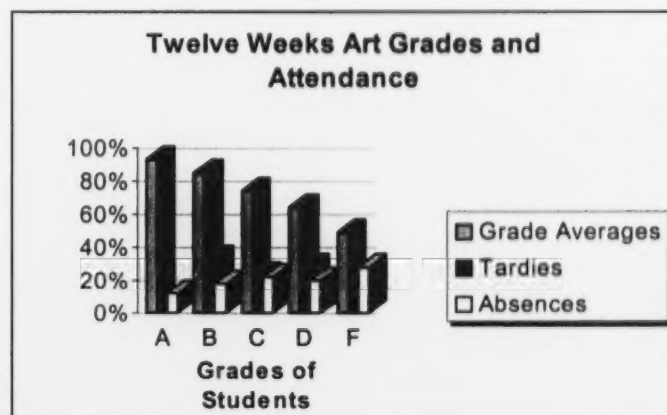


Figure 8. Comparison of twelve weeks Art grades and attendance.

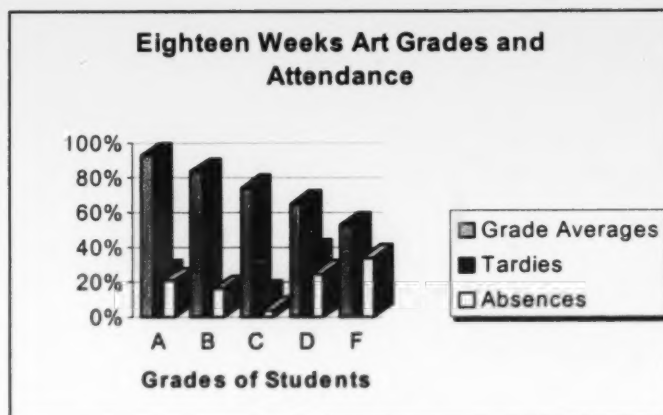


Figure 9. Comparison of eighteen weeks Art grades and attendance.

Analysis of post intervention data of the targeted art class revealed interesting information when comparing attendance and grades. Figures 7, 8 and 9 indicate these comparisons. There was a slight increase in the percentage of tardies and absences in relation to the grade averages of the students, especially during the twelve and eighteen week grading periods. Even though there was also an increase in tardies and absences for the students receiving a grade of an A or B, these students were still able to maintain their higher grades. When the motivation survey was given to students at the end of the intervention period, a few students made separate comments on the back of the survey indicating their difficulty in getting to school on time for an 8:00 a.m. class. While not shown on a graph, the instructor of the art class felt the biggest problem with attendance always occurred with the first laboratory class of the day. Under the current module schedule, the laboratory classes began at 8:00 a.m. and the regular classes began at 8:10 a.m.

Conclusion and Recommendations

Based on the presentation and analysis of data, evidence demonstrated the use of multiple intelligence theories and cooperative learning strategies in the targeted high school art class had a

positive impact on learning. The students exhibited an increase in motivation and more positive attitude toward group activities. In the case of child care, this positive effect was noted during the individual lesson units that involved the use of multiple intelligences and cooperative learning.

There are several benefits gained from this research project. Besides the noted increases in student motivation and attitude, there was a more positive learning atmosphere in the targeted classrooms. The increased motivation may have been a result of the use of multiple intelligence theories and cooperative learning activities. This led to a classroom more conducive to responsible and effective learning. In the targeted art classroom, the most significant benefit gained from the use of multiple intelligence theories and cooperative learning was the increase in positive attitude among students with below average grades. The instructor of the targeted art class noted that below average students in prior art classes exhibited poor attitudes and a general lack of motivation throughout the course. If students were receiving poor or failing grades, they often refused to participate and exhibited negative behaviors. However, during the course of the intervention period with the current targeted art class, the instructor noticed a dramatic increase among students with below average grades. These students displayed positive attitudes and a willingness to participate. Even though these students still had poor grades because they failed to turn in completed work, negative behaviors and poor attitudes were virtually nonexistent. The outcome of these benefits added to the positive and cooperative atmosphere that existed at the end of the intervention period.

The students in the targeted child care class thoroughly enjoyed lessons that involved the use of cooperative learning and multiple intelligence theories. The students found the classroom presentations stimulating, exciting, and refreshingly new when they discovered their preferred learning style. The result was an increase in their involvement with classroom activities when

they were able to utilize this information. The instructor has noted that prior child care classes demonstrated a strong work ethic and classroom involvement. However, the current targeted child care class did not exhibit this same strong work ethic or attitude towards classroom involvement. The students greatly enjoyed working with cooperative learning and the use of multiple intelligence theories, but did not demonstrate a consistent effort in utilizing the information gained from these activities. The theories and strategies used in the classroom were sound and valid, but did not have as much of a long term positive impact on this group of students.

The targeted high school, which is currently operating under a modular schedule will be converting to a four-block system the next school year. The use of multiple intelligence theories and cooperative learning strategies will allow for more in-depth study of units in the curriculum of both the art and family and consumer science programs. The instructors of these courses feel the use of these teaching strategies have helped them to be better prepared for the necessary changes in their classes. The instructors will continue to refine their lessons to improve their questioning strategies in order to encourage higher-order thinking skills in their students, and will continue to implement these strategies with future classes.

The instructors of the targeted art and family and consumer science classes feel the benefits gained from this research study had a positive effect on their classrooms. As a result, the instructors would highly recommend the use of multiple intelligence theories and cooperative learning strategies to other instructors as a means of improving student motivation in the classroom.

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Appendices

Appendix A

MOTIVATION SURVEY

The questions below deal with your motivation and attitude concerning school. Please answers the questions as accurately as possible. There are no right or wrong answers. Use the scale on the right to circle the best response.

	Strongly Agree	Agree	Disagree	Strongly Disagree
1. Succeeding in school is important to me.	4	3	2	1
2. Earning a high school diploma is important to me.	4	3	2	1
3. My parents encourage me to do well in school.	4	3	2	1
4. It is important for me to study.	4	3	2	1
5. I try to maintain a study schedule outside of school.	4	3	2	1
6. I take school work home every night.	4	3	2	1
7. I spend time preparing for my tests.	4	3	2	1
8. Taking notes in class is important.	4	3	2	1
9. Completing homework is important.	4	3	2	1
10. I put a lot of effort into my homework.	4	3	2	1
11. I seek extra help with my schoolwork if needed.	4	3	2	1
12. I like to do more work than what is required.	4	3	2	1
13. It is important for me to do well in this class.	4	3	2	1

Appendix A
(Continued)

14. School is more important to
me than a job or an
extra-curricular activity. 4 3 2 1
15. I feel my effort and my
grade in this class are
closely related. 4 3 2 1
16. I would best describe myself as the following (check one):
- _____ "A" student _____ "D" student
- _____ "B" student _____ "F" student
- _____ "C" student

Appendix B

WORKING IN COOPERATIVE GROUPS

- Control your voice
- Think for yourself
- Respect others' opinions
- Carry your weight
- Help each other
- Stay on task
- Explore different points of view
- Include all members

Adapted from Blueprints for Thinking in the Cooperative Classroom by James Bellanca and Robin Fogarty. IRI/Skylight, 1991.

Appendix C

“RUN-SEE-DO POSTER”
INSTRUCTIONS

1. Choose **two** very verbal students within your group.
2. The two students are to stand up.
3. Your roles within your group are:
 - The **Describer**
 - The **Runner**
4. **THE DESCRIBER:**
 - will hang a sample of the poster (original) outside of the classroom.
 - remains outside in the hallway at all times during the activity.
 - is the **only** person allowed to see the original sample poster.
 - studies the original poster, then moves to a predetermined spot outside of the classroom in order to talk to the runner.
 - may look at the original poster as many times as needed.
 - may **not** see the poster being created by the rest of the group (the artists) until the activity is over.
5. **THE RUNNER:**
 - receives verbal descriptions of the original poster from the describer at the doorway of the classroom.
 - returns to the classroom and communicates the describers' instructions (description) of the poster to the group (the artists).
 - may make as many trips back and forth from the doorway to the group as needed.
 - may **not** touch any of the groups' art materials.
 - may **not** see the original poster that he/she is describing.
6. **THE ARTISTS:**
 - will create a poster according to the descriptions (instructions) of the describer, which have been relayed through the runner. (Each group will create a different poster design.)
 - will use **all** of the materials provided.
 - **cannot** see the original poster until the activity is over.
7. **THE ENTIRE GROUP:**
 - completes a Venn diagram comparing and contrasting the similarities and differences between the two posters.

Appendix D
RUN-SEE-DO POSTERS
OBSERVATION CHECKLIST

Group Members:

1. Is each student participating in the activity?
2. Are the members of the group working together?
3. Is the poster neat? Eye appealing?
4. Does the poster resemble the original?
Comparisons and contrasts:
5. Was the group finished in the required amount of time?
6. Additional observations or comments:

Group Grade:

Individual Grade:

Appendix E

OBSERVATION CHECKLIST

Teacher: _____ Class: _____ Date: _____

Target Skills: _____

Ratings:

+ =

✓ =

○ =

NAMES OF STUDENTS						COMMENTS
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						
11.						
12.						
13.						
14.						
15.						
16.						
17.						
18.						
19.						

Appendix F

PMI CHART (PLUS/MINUS/INTERESTING QUESTIONS)

P (+)	
M (-)	
I (?)	

Taken from The Cooperative Think Tank II by James Bellanca.
 IRI/Skylight, 1992.

Appendix G

OUTDOOR SKETCHING: TREES AND TEXTURE

ART 101

NAMES IN GROUP

_____	CLASS _____
_____	DATE _____

Before we begin our final tree drawings (outdoor sketching), think about all of the elements and principles of design that we have covered so far this year...line, shape, space, and texture. (We will be introducing value with this lesson and also reviewing composition).

We also discussed several things to look at when drawing a tree. Begin by looking at the tree from a distance. What is the basic shape (outline) of the tree? What about size...is it as wide as it tall? Is the foliage dense or sparse...are there open (negative) spaces?

Now come closer to the tree. What is the texture of the tree? Is it the same all over the tree? How do the branches compare in size to the trunk of the tree? What shapes do you see on the tree and the leaves? What about the roots...what does the ground look like around the base of the tree? Now take a look at the values that you see (contrast between light and dark areas). Step back and look at how the sunlight falls on all parts of the tree. Where is it dark and where is it light? Observation is the key in starting this assignment.

Cooperative Learning Assignment:

As a group, you will explore all of these components that make up a tree. Your group will tour the school grounds together and collect natural objects to "create" a three-dimensional tree. (Think about the parts of the tree...roots, trunk, branches, etc.) When you are done, answer the questions on the back page together as a group and sign your paper. As a class, we will then discuss what we have experienced and learned together. Have fun creating!

BEST COPY AVAILABLE

Appendix G
(Continued)

Answer the following questions together as a group:

1. What objects did you collect to create your "three-dimensional tree"?

2. Describe the textures of the objects that you found.

3. Explain how you could draw and shade each of these textures.

4. What did you learn from this activity?

KIDSART

Your name _____

Art Analysis Worksheet

1. Name of artist _____
2. Title of artwork _____
3. Date artwork was created _____
4. This artwork looks mainly:
 - ☐ Realistic...things look like they would in real life.
 - ☐ Abstract...designs, colors, shapes and lines.
 - ☐ A combination of real and imaginary things.
5. What's the main thing you see in this artwork? _____

6. List the first 4 things you notice when you look at this artwork.
 1. _____
 2. _____
 3. _____
 4. _____
7. What kinds of colors do you see in this artwork (bright, dark, pastel, warm, cold, names of main colors) _____

8. What kinds of lines do you see in this artwork (straight, curved, heavy, soft) _____

9. What kinds of textures do you see in this artwork (rough, smooth, soft, hard) _____

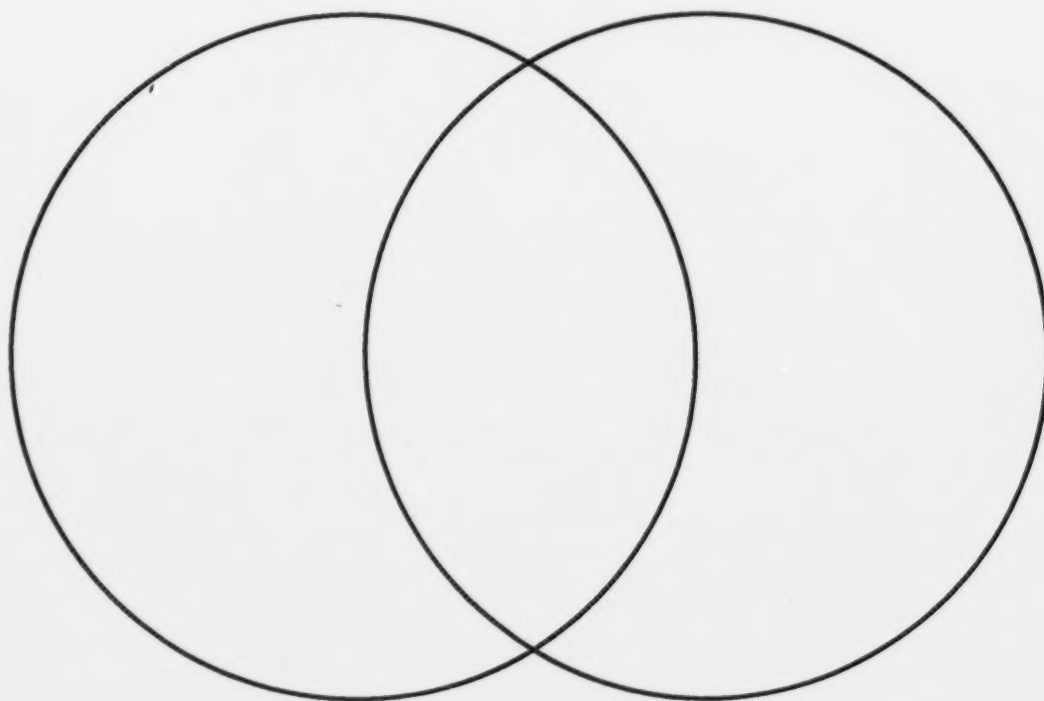
10. Circle the words below that you would use to tell about this artwork.

beautiful	busy	angry	lonely
happy	colorful	soft	thoughtful
mysterious	quiet	exciting	ugly
funny	cold	proud	peaceful
simple	wild	sad	plain
adventurous	fun	crazy	loving
11. Write a sentence telling your opinion of this artwork. Use 2 descriptive words from the list above and 2 other descriptive words you think up yourself.

Appendix I

NAME _____

CLASS _____

VENN DIAGRAM

Taken from The Cooperative Think Tank by James Bellanca.
IRI/Skylight, 1990.

Appendix J

"SELF-PORTRAIT DRAWING"Art 101Scoring Rubric

NAME _____ CLASS _____ DATE _____

SELF-PORTRAIT DRAWING

The student has demonstrated an understanding in the drawing of the following features in the self-portrait drawing:

A. Shape of face

B. Eyes

C. Nose

D. Mouth

E. Hair/ears

F. Clothing/neckline

Points
ReceivedPoints
Possible

A. _____ out of 10

B. _____ out of 10

C. _____ out of 10

D. _____ out of 10

E. _____ out of 10

F. _____ out of 10

SHADING/USE OF COLORED PENCILS

A. Various colored pencil techniques have been used in the drawing (i.e. color overlay, burnishing, impressed line, etc.).

A. _____ out of 5

B. The drawing shows a good range in values. Contrast can be seen in the drawing in areas such as skin tones, hair colors, shadows around the eyes and below the neck, etc. Warm and cool colors have been used in the shading.

B. _____ out of 15

C. Values have been blended/shaded smoothly and evenly, with no apparent streaks.

C. _____ out of 10

NEATNESS AND CRAFTSMANSHIP

A. There are no heavy pencil lines, erasure marks, or smudges visible. Care has been taken to avoid tearing or bending the paper.

A. _____ out of 10

TOTAL POINTS EARNED: _____ out of 100Comments: _____Grading Scale:

90-100 = A

80-89 = B

70-79 = C

60-69 = D

0-59 = F

Appendix K

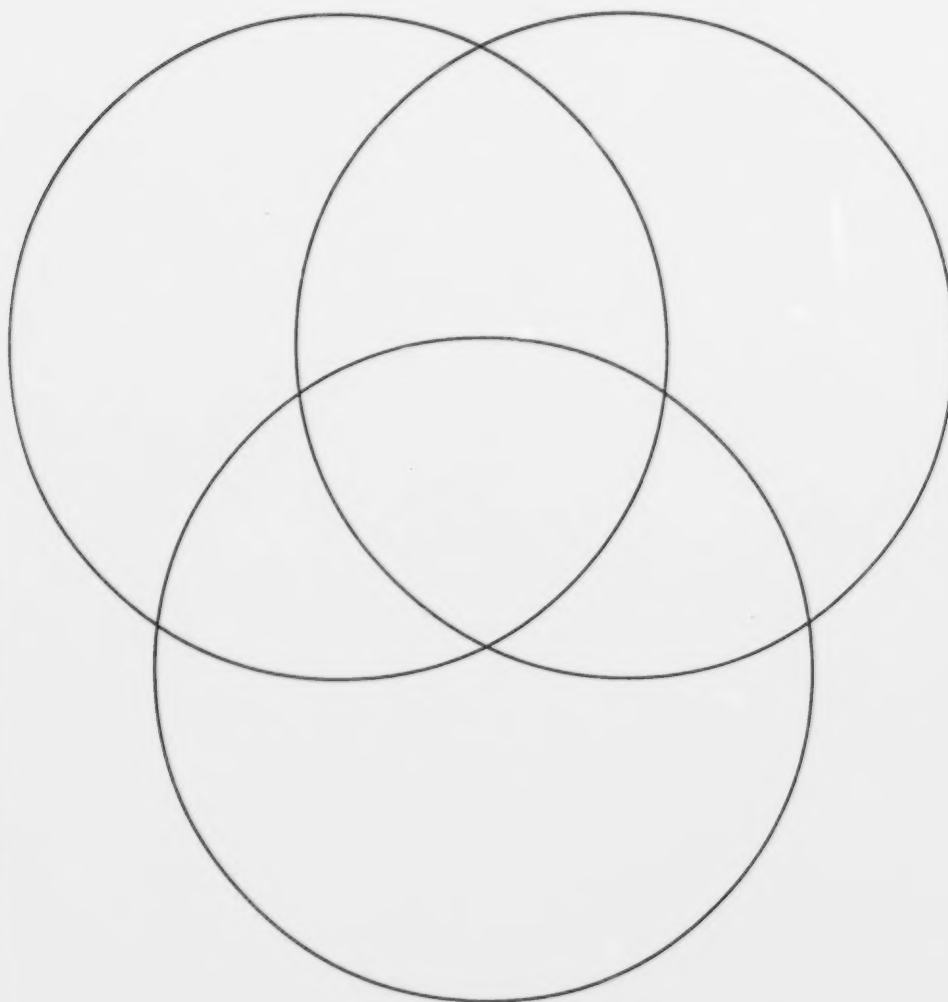
SELF-PORTRAIT JOURNAL QUESTIONSART 101

Please consider the following questions when writing your journal about the self-portrait drawing unit:

1. Did you enjoy the self-portrait drawing unit? Why or why not?
2. Do you have a better understanding of how to draw a portrait/self-portrait? (This includes the drawing of facial features, proportions on the face, textures of hair, etc.) Explain your answer.
3. Was there any part of the self-portrait drawing that you feel you did well? Did not do well?
4. What could you do to improve in these areas?
5. General comments?

Appendix L

Name _____ Class _____ Date _____

Triple Venn Diagram

Taken from The Active Learning Handbook for the Multiple Intelligences Classroom by James Bellanca. IRI/Skylight, 1997.

Appendix M

Perspective Drawing UnitArt 101
Scoring Rubric

NAME _____ CLASS _____ DATE _____

<u>One-Point Perspective Practice</u>	Points Received	Points Possible
A. The student has demonstrated knowledge and understanding of vanishing points.	_____	out of 5
B. Neatness and craftsmanship are evident.	_____	out of 5

Two-Point Perspective Practice

A. The student has demonstrated knowledge and understanding of vanishing points.	_____	out of 5
B. Neatness and craftsmanship are evident.	_____	out of 5

Final Perspective Drawing

A. The student has demonstrated the use of straight edges, placement of angles, and balance. The drawing fills the entire page.	_____	out of 10
B. The correct number of vanishing points have been used within the drawing. All lines and angles recede to the correct vanishing points.	_____	out of 10
C. Value and shading has been used to show contrast and shadows in the design.	_____	out of 15
D. Care has been taken to avoid any unnecessary smudges, pencil lines, or torn edges. Neatness and craftsmanship are evident.	_____	out of 15

TOTAL POINTS EARNED: _____ out of 70

<u>Comments:</u>	<u>Grading Scale:</u>
	63 - 70 = A
	56 - 62 = B
	49 - 55 = C
	42 - 48 = D
	0 - 41 = F

Appendix N

DATA COLLECTION (Targeted Art Class)

- | | |
|--|---------------------------------|
| 1. Administer motivation survey | Beginning of school |
| 2. Administer learning styles assessment | Beginning of school |
| 3. Gather attendance records | Beginning of school |
| 4. Initiate student journal entries | Beginning October 1;
ongoing |
| 5. Initiate teacher journal entries | Weekly |
| 6. Administer unit quizzes, semester exam | Ongoing |
| 7. Incorporate the use of observational checklists
to record individual and group criteria
(ie. motivation and behavior) | Ongoing |

INTERVENTION TIMELINE (Targeted Art Class)

- | | |
|--|-------------------------------|
| 1. Present lessons focusing on cooperative learning
and social skills | September |
| 2. Introduce students to higher order thinking skills
(to be incorporated with individual and group
discussions) | September/October;
ongoing |
| 3. Cooperative group activities | Once per major unit |
| 4. Incorporate the use of multiple intelligences | Once per major unit |
| 5. Revise current lessons to incorporate the use of
cooperative learning and the use of multiple
intelligences | Ongoing |
| a. Outdoor sketching: Creating a three-
dimensional tree (trees and texture) | Mid-September |
| b. Run-see-do posters | Week 3 |
| c. Cooperative drawing activity (description/
drawing/working with a partner) | Week 3 |
| d. Student journal entries | Begin week 5; ongoing |

Appendix N (Continued)

- | | |
|--|-----------------|
| e. Comparing portrait artists (Venn diagrams and jigsaw) | Week 6 |
| f. Incorporate music and art | Week 7; ongoing |
| g. Group figure drawing | Week 7 |
| h. Comparing types of perspective | Week 9 |
| i. Watercolor techniques and their applications | Week 11-12 |
| j. Warm and cool colors; uses and psychological effects | Week 16 |
| 6. Revise current assessments (ie. quizzes, tests) to incorporate higher order thinking skills | Ongoing |
| 7. Incorporate the use of rubrics as an assessment tool | Ongoing |

Appendix O

ART / CURRENT PROGRESS

Name _____ Class _____ Date _____

Current Grade: _____ (as of): _____

Tardies: _____ Absences: _____

Missing / Incomplete work:(Sketchbooks can be turned in up to **one week late only**)

1.

2.

3.

4.

5.

ART / CURRENT PROGRESS

Name _____ Class _____ Date _____

Current Grade: _____ (as of): _____

Tardies: _____ Absences: _____

Missing / Incomplete work:(Sketchbooks can be turned in up to **one week late only**)

1.

2.

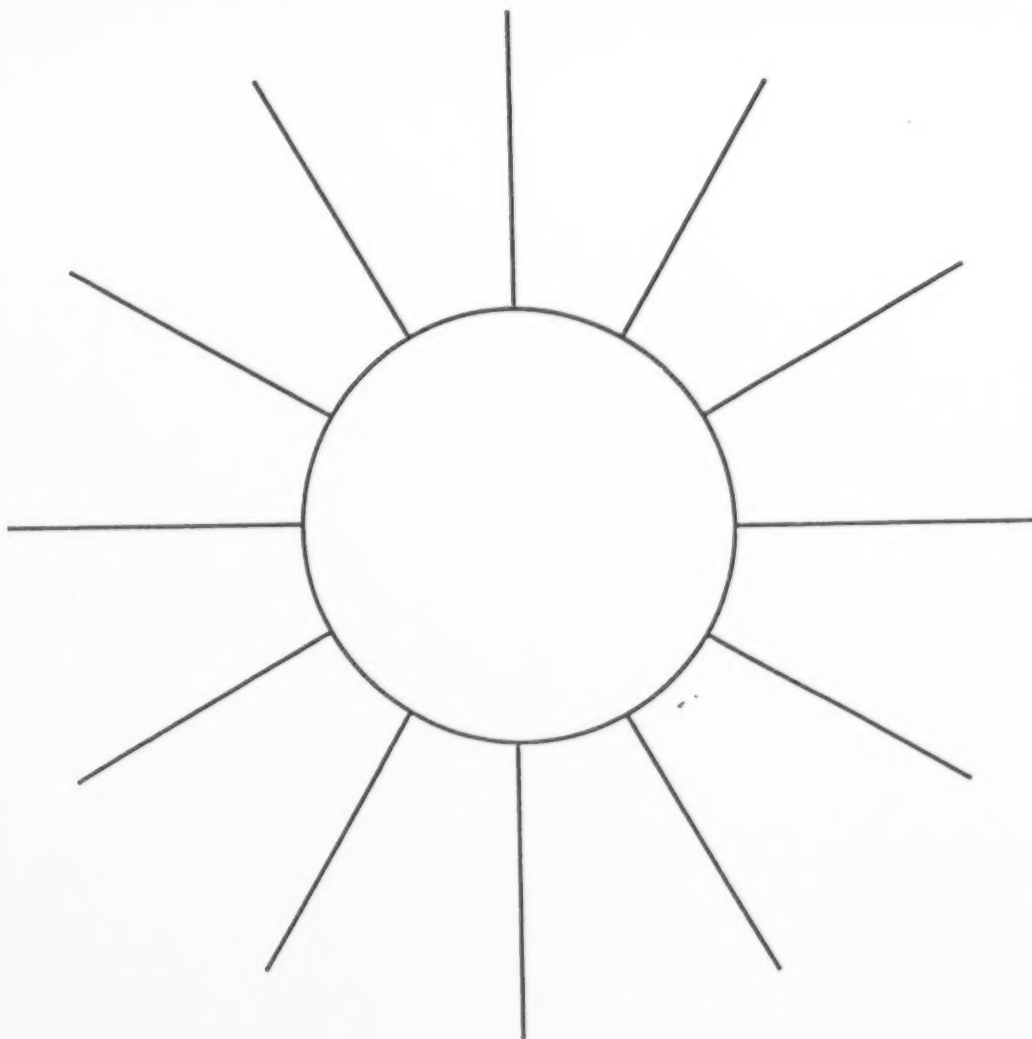
3.

4.

5.

NAME _____

CLASS _____

THE WEB

Taken from The Cooperative Think Tank by James Bellanca,
IRI Skylight, 1990.

Appendix Q

Creative Activities Project Assignments

Creative Activities Project Assignments

Each person is to select 8 creative activities that will be used in Tiny Tigers Preschool.

Your activity must be pre-approved.

Your chosen activity must demonstrate your understanding of a creative activity for children. Refer to the Venn diagram we did in class.

Each activity must include the following:

- ☐ Two goals that answer the question of *why* the child is doing this. Look at our Web as to the value of art.
- ☐ Each goal requires a behavioral objective. A behavioral objective describes what the child will be doing to meet the above goals.
- ☐ A numbered list of all the materials and amounts required for the child to participate in the activity.
- ☐ A numbered list of the procedures the child must follow to participate in this activity.
- ☐ A statement of closure or transition to the next activity.
- ☐ Name, author, and page number of the resource used.

Grades will be determined by the following criteria:

- ♦ Activity must be professionally prepared meeting the above criteria. (100 points each)
- ♦ Two oral presentations to the class must be well prepared. (100 points each)
- ♦ The above projects meet due date. (100 points each)

Appendix Q
(Continued)

CREATIVE ACTIVITIES

Student Name _____

Date _____

Name of Activity _____

Goals for children: Why are they doing this?

1. _____

2. _____

Behavioral Objectives: This explains what the child will be doing to meet the above goals.

1. _____

2. _____

List all the materials and amounts needed for children to perform activity.

1.

6.

2.

7.

3.

8.

4.

9.

5.

10.

Appendix Q
(Continued)

Number the steps the child will be doing.

Closure: How will the activity end? What choices will the child be given now?

Name the resource book, the author and page number used for this activity.

Appendix R
Finger Play Rubric

Finger Play Rubric	Acceptable	Unacceptable
Appropriate songs were chosen		
Encouraged active participation of all children		
Words and actions were memorized and enthusiastically performed		
Uses eye contact		
Encourages active participation of children		
Totals 1 point Acceptable, 0 points Unacceptable		

Appendix S
Mathematics Graphic Organizer

7 Hands-on Math Skills

Scholastic Early Childhood Today, Feb 1994, 43-48

Read the article and create a graphic organizer.

Appendix S
(Continued)

Discovering Math
Scholastic Pre-K Today, February, 1992, 32-37
Child Care Occupations

MATH CONCEPT

Examples

MATH CONCEPT

Examples

MATH CONCEPT

Examples

MATH CONCEPT

Examples

MATH CONCEPTS

Examples

Appendix S
(Continued)

Measuring, Graphing, & Estimating

Scholastic Pre-K Today, Feb 1992, pg. 39-44

Graphing Concepts

First graph experiences must be real concrete objects

Examples of graphing activities

Next step in graphing activities

Examples

Your ideas for Graphs

Appendix T
Math Assignment Project

MATH ASSIGNMENT PROJECT

Select 6 math activities you will be able to use in Tiny Tigers.

1. Identify concept of math you are targeting for the children. This may be several.
2. State the behavioral objectives. Mention 2
3. List the materials and supplies used.
4. List the procedures. What will the child be doing?
5. What open-ended questions will you ask to insure the children understand the math concept? You must list at least three.
6. When will this activity take place? During another activity or as a separate activity?

Appendix U
Math Lesson Plan

MATH LESSON PLAN

Student name _____ Date _____

Math concept _____

Behavioral objectives (At least two)

List the materials and supplies used.

List the procedures. What will the child be doing?

What open-ended questions will you ask? (At least three)

Where will the activity take place? Will this be a separate activity or part of another?

Name of resource, author, page number and date if a magazine

Appendix V
Flannel Board Story Project

Flannel Board Story Project

Assignment: Prepare flannel board characters from a storybook in our classroom.

1. Select a book to use for making characters.
2. Keep the characters simple and few in numbers (4 or 6).
3. You will present your story to the class using appropriate teaching methods discussed in class.
4. You may use a plastic cover to store you flannel story.
Put it in your portfolio for Child Care Occupations.

You will be graded according to the flannel board story rubric.

Appendix V
(Continued)

Flannel Characters Rubric

	Excellent Exceeds standards 4 points	Average Meets standards 3 points	Fair Below standards 1 point	Poor Does not meet 0
Creativity				
Originality				
Child appeal				
Professional in appearance				
Total				

Appendix V
(Continued)

Flannel Story Presentation Rubric	Yes	No
1. Uses a good introduction to establish the mood of the story.		
2. Tells story with a conversational tone.		
3. Uses eye contact.		
4. Conveys enthusiasm		
5. Demonstrates good posture		
6. Recognizes children's responses while still maintaining control and focus.		
7. Uses a lively tempo suited to children.		
8. Encourages children to actively participate with flannel characters.		
9. Allows children's comments to be added to story.		
10. Makes the ending clear.		
11. Chooses a story developmentally appropriate.		
Total Yes = 1 point No = 0 points		